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ABSTRACT

This document describes a data processing system now being implemented that is designed to provide rapid retrieval of information concerning a certificate holder's status. A brief history of past and present methods of teacher certification processing is included. These methods are then compared to the system currently being implemented. The new system provides the capability of collecting substantially more data and of storing and retrieving it in a meaningful report format. According to the author, the primary benefits of this system over the old are the ease with which inquiries can be answered, the more rigorous editing capabilities, and the faster computer service. Information on the costs, the procedures, and the problems of implementing the system and some indications about the directions of future changes in recordkeeping are included. Numerous charts and sample forms conclude the report. (Author/DN)

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DATA PROCESSING AT NORTH CAROLINA DEPARTMENT OF PUBLIC INSTRUCTION DIVISION OF TEACHER CERTIFICATION

by

John D. Wilson

December 1971

EA 004 386

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I. Introduction

This paper is intended to be a description of the use of automatic data processing by a part of the North Carolina Department of Public Instruction. It does not describe the requirements for becoming certified. Should the reader be interested in obtaining more information about these requirements, he should write: Division of Teacher Certification, North Carolina Department of Public Instruction; Education Building; Raleigh, N.C., 27602.

The project reported on here was developed with the cooperation of the Management Information Systems Division and the Teacher Certification Division of the North Carolina State Education Agency. The exhibits and most of the charts used were developed in the course of the project.

A. Statement of Need.

The need for a method of rapidly retrieving information concerning a certificate holder's status is becoming increasingly apparent. Although the currently adopted method is a very good approach and is effeciently administered, sometimes problems arise.

> Slow Retrieval - The actual speed of retrieval is rather fast if the file folder is in the file when it is wanted; however, 50% of the time the folder is out of file and may take several minutes or up to an hour to locate. This is due mainly to folders being pulled on written request and then having a follow-up telephone call received inquiring about the same request.*

This situation would not improve if some changes to the current system (explained in the next section) were not implemented. The reason is that approximately fifteen thousand new certificates are issued each year. Almost that many certificates are renewed each year, also.

When the Division of Teacher Certification receives an inquiry concerning the proper position in the State funded educational salary structure for a teacher or administrator, his most recent experience as well as his college course work and other approved certification preparation activities must be available for evaluation. (An estimated 70 to 80 percent of these inquiries can be responded by the data contained in an "alpha-index card" which will be explained lated.) Due to the high rate of out-of-file occurrences, current searches for a folder often require prolonged searches through queries of folders waiting to be filed and stacks on various desks.

This frequently makes it difficult or lengthy to handle telephone inquiries.

*From a proposal presented to The N. C. Teacher Certification Division in Raleigh after a study had been conducted.

B. History and Current Methods.

The State of North Carolina began to certify teachers about the year 1918. Prior to 1962, all folders containing data were filed alphabetically and no index was required. The certificates were hand typed. No statistics could be obtained except by the simplest sampling techniques. In 1962 records were keypunched and certificates printed on an IBM 407 Electronic Accounting Machine. The punched cards have been saved and updated in a card master file. New Certificates are issued a sequential number on a first-in first-out basis.

The current data processing methods employed involve the interrelationships of three files. These files are: 1. the folders containing all documents presented in support of the inssuance of a certificate and current rating status. This file is in certificate number order. 2. A file of index cards which contain the name and certificate number of each certified individual. This file is in alphabetic sequence by last name to cross index the first file. 3. The third file is the series of punch-cards which are used to print the certificates. This file is in certificate number order. Its use is primarily for compiling statistical reports. The file is matched on an annual basis with budget data on each instructional and administrative position in North Carolina's public schools. This process is important as it provides a means of validating data and updating experience for active teachers.

In February of 1971, a feasibility study was conducted to determine the possibilities of converting the current method of

unit record processing to a computerized system. This entailed approximately three man-months and arrived at a preliminary design and some projections of time and manpower and equipment needed.

In June, the project was given a green light and asked to be completed by Christmas, 1971, instead of the originally estimated completion date of late February, 1972. Priority was also given the project so that the revised schedule might be met.

II. The Proposed System

A. Explanation

The primary objectives of the proposed system (now being implemented) are to provide the facility of collecting substantially more data, storing it and retrieving it in a meaningful report format. The latter is an extremely important part of any system that is to contribute valuable information about the State's teacher force. Generalized report writing programs will be used to select and print pertinent data and will be designed and implemented on an "as needed" basis. As such these reports will not be discussed in any great detail in this paper. The detailed system specifications which the programmers worked from are about 125 pages, so will only be used as a source of some data for this paper.

The heart of this new system is a rather large edit and update program which carefully checks all values submitted for an individual's record against specific permissable values, upper and lower bounds or some other requirement. Some data must be present in order to have a valid record, some is optional.

Before this system, no means has been available to collect social security number. In the beginning, it will be optional data but after a few months, it will be required in every master file record created. This will be done because it is proposed that a future revision of this system convert to a social security number key and drop the currently assigned six digit certificate number.

Some other additional data not currently being collected will include up to three entries for education level, institution code, and date of graduation; the date, teaching areas and scores achieved on the National Teacher Examination; also up to five years of employment history data will be available to the evaluator. This data will help in the analysis and projection of State fund allocations to local school districts, the evaluation of teachers scores based on statewide norms, and will give information on which institutions prepare what sort of teachers both in quantity and quality. Also it will be possible to see if certain schools prepare more and/or better teachers in a certain subject area.

Teacher transcripts, though required for certification will not be a part of the master record. No meaningful course codes or grading systems span all schools, and the data would not contribute that much to the value of the Data Processing master file. Transcripts will be retained in a person's document folder (which will eventually be microfilmed).

The inputs to the edit and update program will be keypunched into cards in the format suggested by the coding form shown in

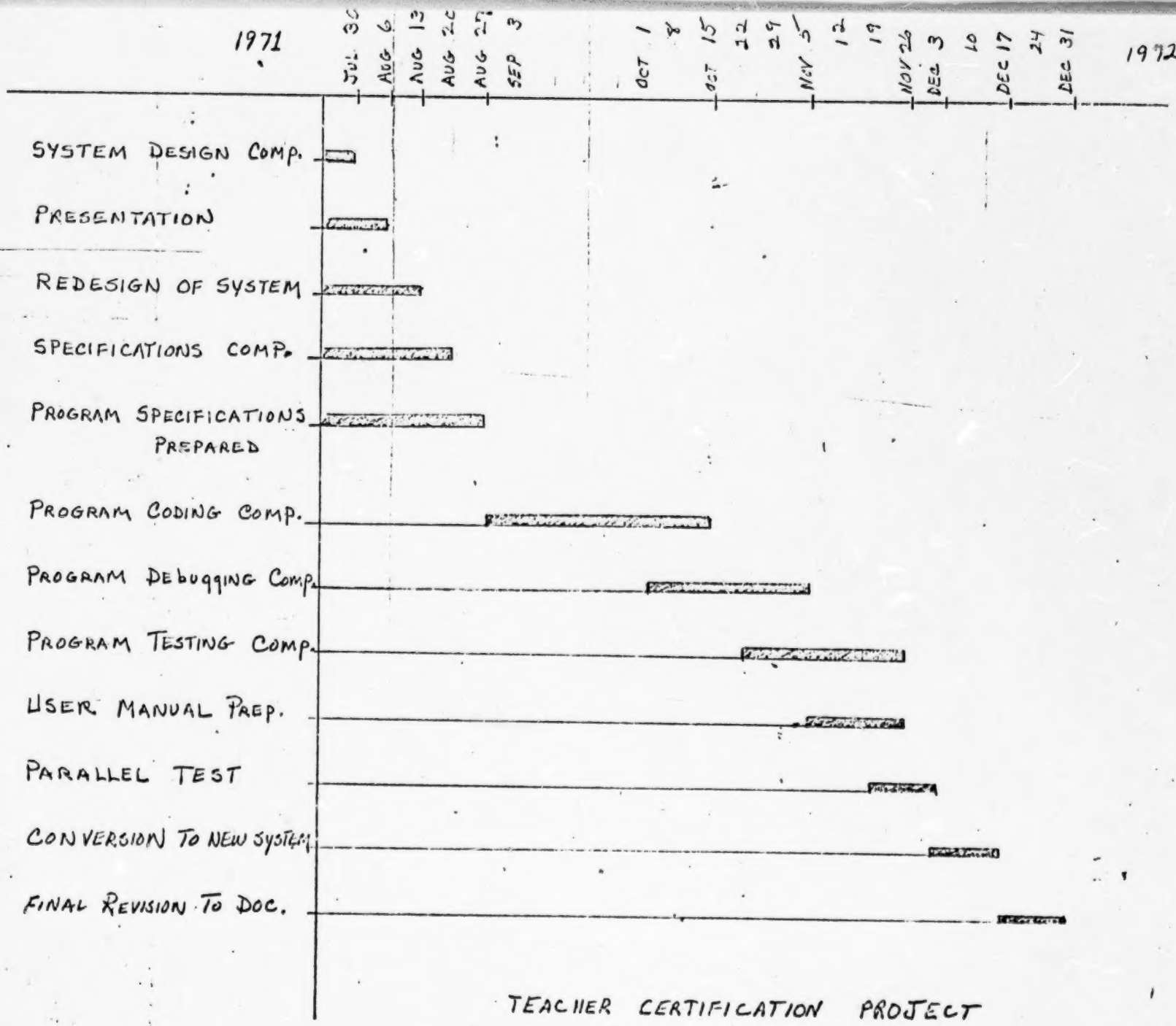
exhibit B. However, a keypuncher could work directly from the application for a certificate. The application blank itself will be re-designed for easier use of keypunchers, although the general organization of data will be approximately the same.

Currently keypunchers work from marked up file copies of certificates. After familiarity with the new card layouts is gained, this means of input will be accomodated. In fact, probably very little data will be coded on the form shown in exhibit B.

B. Charts

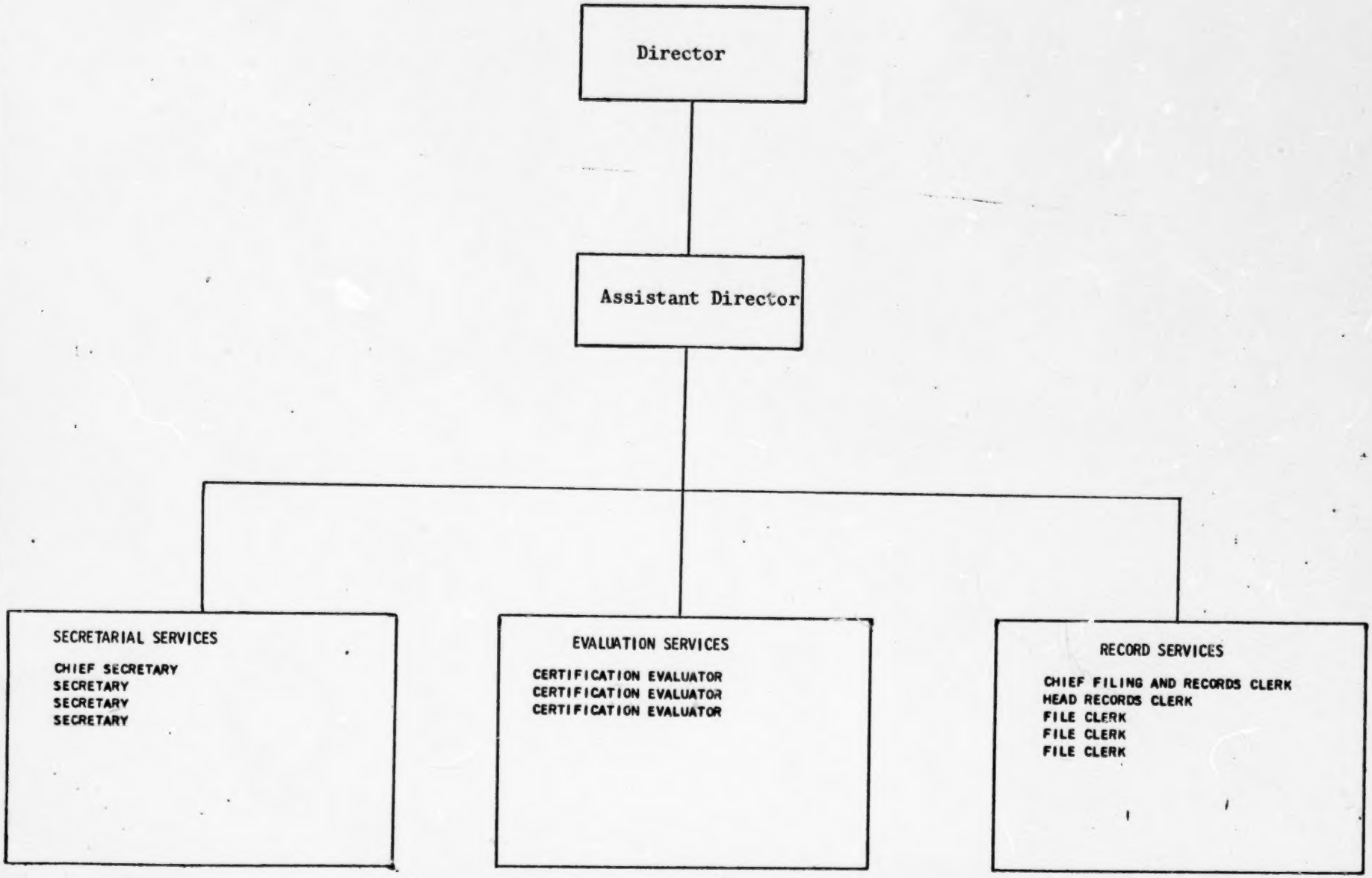
The following charts include a Gantt Chart showing the schedule developed last June. As of this writing (mid-November, 1971) the schedules appear to have been met pretty well. Assuming no serious problems, we anticipate being able to be fully operational at the beginning of 1972. Following this are charts showing the organizational structure of the Division of Teacher Certification, and a chart of the general view of the work process of the Division.

Also included are flow charts showing the programs involved and their relationships to the whole system. Note that one chart is for the weekly or semi-weekly cycle and one is for a longer cycle - approximately each month.

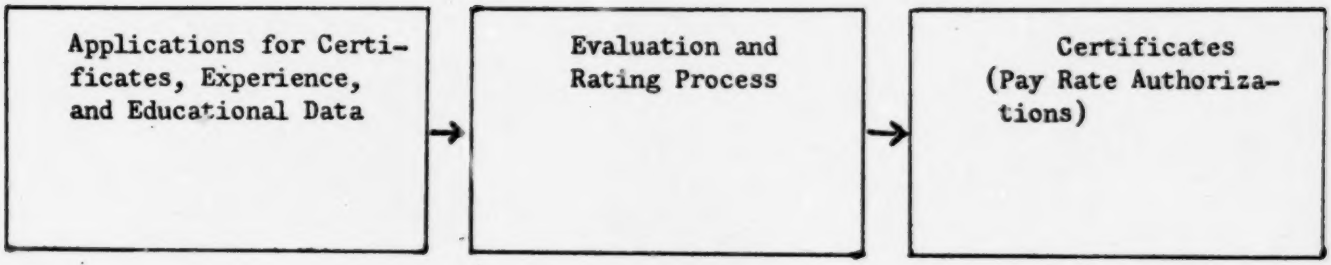


TEACHER CERTIFICATION PROJECT

CERTIFICATION DIVISION

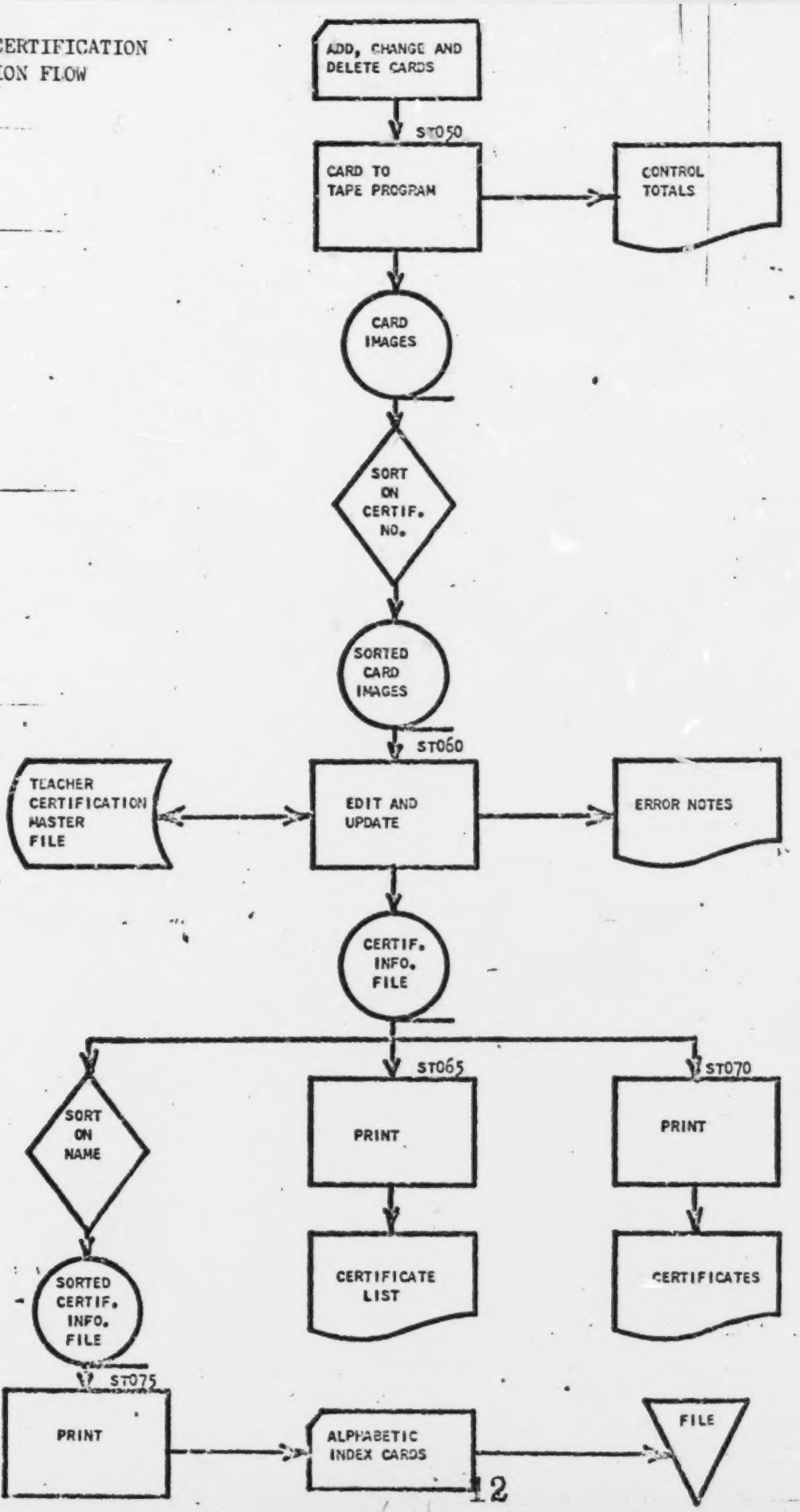


TEACHER CERTIFICATION DIVISION



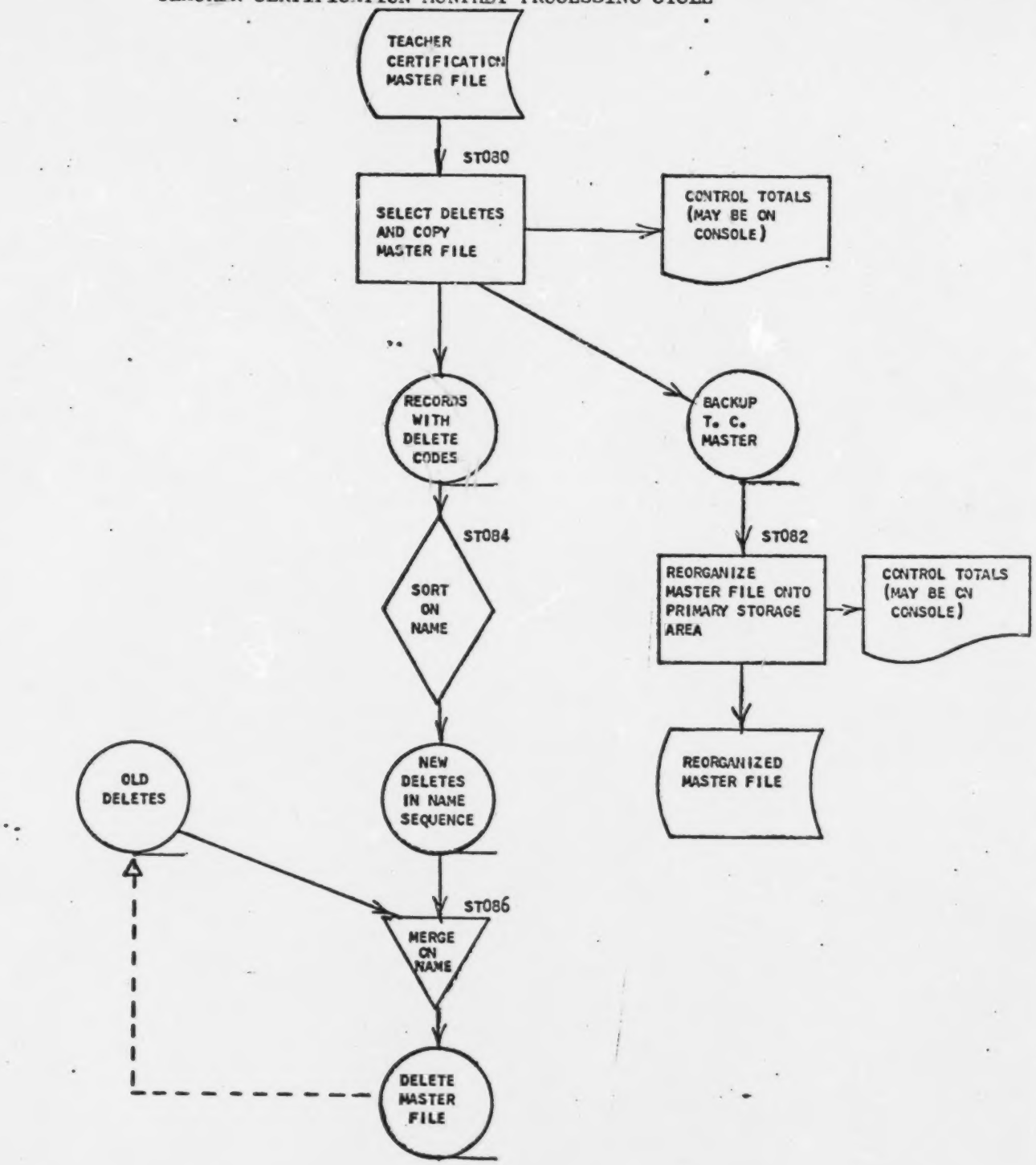
Input-Output Chart of Teacher Certification Division Activities

TEACHER CERTIFICATION
APPLICATION FLOW



6-d

TEACHER CERTIFICATION MONTHLY PROCESSING CYCLE



C. Outputs

To the teacher in the school, the only visible output is the certificate shown in exhibit C. However, this is the same certificate currently used. The most notable change in the new system is the availability of an "alpha-index card". Since this card is small, and since only a relatively small number of people will be using this file directly, the data displayed is not labeled and quite cryptic.

Other important print outs are the certificate list and the error messages which point out data problems that must be resolved.

Statistical reports and the programs which compile them, an important part of the system, have not been fully designed yet. They will be undertaken in the early part of 1972.

D. Benefits

The primary benefit of this system over the one used in the past is that a significant number of inquiries will be able to be answered by the data on the new "alpha-index card". The more rigorous editing capabilities of the computer as well as the faster service are other definite advantages. A benefit of the use of microfilm mentioned in part V is the archival angle of having a teacher's credentials available in case the records of his attendance were destroyed at his alma mater. This is more than a remote possibility with campus unrest fulminating in attacks on school administration buildings.

III. Conversion Efforts

A. Data Files and Programs Required

The problem of converting the current Teacher Certification Master File (300,000 cards), the 1971-72 school year administrative

budget file (55,000 cards), and the 1970-71 Principal's Preliminary report (50,000 cards) is a monstrous task. The North Carolina State Retirement System's Master File was also used to extract some data about the State's teachers.

The first step was to put all the cards on tape and align a key field, certificate number and insert a card code for sorting purposes. Then the records were sorted and fed into a reformatting program which made them appear as newly certified teachers to the edit and update program. These programs will take approximately twenty-five hours of time on an IBM 370/145 although the time would be comparable on any other machine with input-out equipment of similar speeds, since the programs for conversion are all I/O bound, i.e., they are waiting for reads or writes of data. The printing of all the "alpha-index cards for the first time will take an estimated thirty-five hours more computer time.

B. Problems Encountered

The unit record equipment used up to this time was not very demanding of the quality of data fed into it. Consequently some cards with invalid data (three or more punches in one column) were found. Of a sample of data used for testing, approximately 2.1% of the input cards required corrections and re-entry. This will mean about 6,500 cards to correct and re-enter for the complete conversion.

This assumes that the errors are equally dispersed throughout the file. It is hoped that the quality of data improves as the file entries are more recent. This would mean fewer corrections before the system could be up and running.

IV. Cost Estimates

A. One Time Conversion Costs

The conversion costs are primarily of two kinds, man weeks of effort and machine time. Assuming on average manpower wage of $225. per week for a total of 60 man-weeks gives a cost of $13,500. The machine time for conversion is estimated to be 35 hours of machine time at $40. per hour for a machine cost of $1,400.

Total cost of men and machine for conversion to the computer system would be about $15,000. This does not include the overhead of management nor does it consider the time required by people from the Division of Teacher Certification. To date this time has not been extensive.

B. Continuing Costs

The continuing costs of the new system will be from three major areas - manpower, computer time costs and forms costs. The continuing manpower requirement may be estimated at one systems analyst at half-time and one programmer at half-time. Using the assumption that their average wage is $225. per week each this is a weekly cost of $225. The machine expenses are estimated at 1.5 hours per week. There are monthly runs also to be considered of about four hours per month or an additional hour per week. This gives 2.5 hours per week at $40. per hour or $100. per week. Forms are calculated to be $1500. per year. In tabulated form:

manpower	$225 weekly	$11,500 annually
computer time	$100 weekly	5,000 annually
forms	$ 30 weekly	1,500 annually
TOTAL	$355 weekly	$18,000 annually

V. Future Directions

Several developments are on the horizon in the records section. The most far reaching change soon to be implemented is the installation of microfilming equipment.

A. Microfilm.

The recording of present and future documents on microfilm is a task which is necessitated by the lack of available space to expand the existing overcrowded file room. The film will probably be stuffed into jackets and used in the form of microfiche. When a record of an invidivuals credentials is desired, the microfiche will be duplicated and the original returned to the file. This should eliminate the "out of file" condition which is encountered in approximately one-half of the current searches for a folder. Microfilm is also a more durable media than paper, it doesn't fade yellow or tear as easily.

B. Computer Output Microfilm (COM)

Each year the experience history of actively employed teachers must be updated. This constitutes updating over one third of the file and hand filing of these alpha-index cards would be a tedious process. For the first year, the cards will be printed on a computer printer and plans were to regenerate the entire file annually. It may be feasible to put the index on microfilm directly from the computer and access it with a reader-printer. However, updates would still be printed on continuous form cards and this would necessitate two searches for many index entries.

Initial cost estimates including machine expenses are approximately half that of hard copy. This may justify semi-annual or even quarterly regeneration of the file on microfilm which would keep

the size of the update file relatively small.

C. Revision of Approach

Already several areas which can be improved upon have been lined up for tentative revisions in 1972. Rearrangements of information in several of the input card layouts would be easier for the user. A large number of certificate holders are certified in only one area. Since the new system uses fixed length records, it was decided to devote space for six certificate areas per teacher. Much of that space is not used and could be eliminated by using variable length records or a master record followed by several trailer records. A similar approach could be used in the storing of repetitive experience history data.

Form 1
4-28-71—25M

APPLICATION FOR INITIAL NORTH CAROLINA TEACHER'S CERTIFICATE

STATE DEPARTMENT OF PUBLIC INSTRUCTION, RALEIGH

Instructions for completing this application are found on the back page.

I. Name _____
Last First Middle Maiden

(Print plainly This name must agree with the name used or to be used on your Social Security Card.) Social Security No. _____

II. Address _____
Street or P. O. Box

_____
City State Zip Code

III. Date of Birth _____

Marital Status _____

Race _____ Sex _____

IV. Record of Preparation:

Colleges	Address (City and State)	Dates Attended	Degree

V. Record of all Teachers' Certificates Held:

State	Kind	Class	Number	Expiration Date

VI. Have you taken the National Teacher Examinations?

Yes _____ No _____ If yes, please give date and where examinations taken:

_____

VII. Teaching Experience and Military Service:

Began Month Year	Ended Month Year	Name of County or City Unit	State	Grade or Subjects Taught

(Do Not Write in Spaces Below)

Areas of Certification:

Expiration Date	Effective Date	Rating: Class and Experience	Alternate Rating
Professional		Academic	

Conditions:

NTE_____ TA_____ WC_____ C_____

VIII. Applicant's Statement: I hereby make application for a certificate as follows:

Class of Certificate _____

Area(s) _____

(See list of certificates issued in N. C. on back page of this form.)

_____
Applicant's Signature

12 19

IX. OUT-OF-STATE INSTITUTIONAL RECOMMENDATION FOR PROFESSIONAL SCHOOL PERSONNEL: Officials from out-of-state colleges should fill out these sections (if applicable) and forward this form with an official transcript of the Record of Scholastic Preparation to the DIVISION OF TEACHER EDUCATION, STATE DEPARTMENT OF PUBLIC INSTRUCTION, RALEIGH, NORTH CAROLINA.

Student Teaching Record:

Name of Student _____

Name of College _____

Title and catalog number of Supervised Teaching Course _____

_____

Subject or subjects taught _____

and/or

Grade or grades in which taught _____

Did this applicant have full-time student teaching? Yes _____ No _____

Number of clock hours of actual teaching _____

Comments:

Date _____ _____

Signature and Title of Appropriate College Official

NCATE (National Council for Accreditation of Teacher Education) recommendation: (If not applicable, leave blank.)

Name of College _____

Has college been visited by NCATE and approved as a result of the visit? Yes _____ No _____

Applicant's major or area of teacher preparation _____

Area(s) in which applicant is recommended _____

_____

Date _____ _____

Signature and Title of Recommending College Official

X. NORTH CAROLINA INSTITUTIONAL RECOMMENDATION FOR PROFESSIONAL SCHOOL PERSONNEL: This section must be completed by North Carolina institutions with approved programs of teacher preparation. Please forward this form and an official transcript of the Record of Scholastic Preparation to the DIVISION OF TEACHER EDUCATION, STATE DEPARTMENT OF PUBLIC INSTRUCTION, RALEIGH, NORTH CAROLINA.

Name of Student _____
Last First Middle Maiden

Name of Institution _____

Degree _____ Date Conferred _____ Teaching Field(s) _____

_____ _____

NATIONAL TEACHER EXAMINATIONS

Weighted Common Score _____ Date Taken _____

Teaching Area and Score _____ Date _____ Teaching Area and Score _____ Date _____

COLLEGE RECOMMENDATION FOR PROFESSIONAL SCHOOL PERSONNEL

ACADEMIC RECOMMENDATION

The applicant has completed the academic requirements of this institution's program of preparation for a certificate as a teacher and is hereby recommended as possessing the academic competencies stipulated by the State Guidelines for the certificate.

Secondary Certification or Special Subject (K-12) Certification

Subject(s) in which the applicant completed student teaching _____

_____ _____ _____
*Certification field Signature and Title of Recommending Official Date

_____ _____ _____
*Certification field Signature and Title of Recommending Official Date

Intermediate Certification

Grade(s) in which the applicant completed student teaching _____

_____ _____ _____
Subject endorsement(s) **Signature and Title of Recommending Official Date

Early Childhood Education Certification (Only Professional Recommendation required)

Grade(s) in which the applicant completed student teaching _____

PROFESSIONAL RECOMMENDATION

The applicant has completed the professional education requirements of this institution's program of preparation for a certificate as a teacher and is hereby recommended as possessing the professional competencies stipulated by the State Guidelines for the Approval of Programs for Teacher Education.

_____ _____
Signature and Title of Recommending Official Date

*Signature of recommending official required for each area of certification
**Recommending official for academic concentration for Intermediate certification is to be determined by the institution.

APPLICANT'S INSTRUCTIONS FOR COMPLETING FORM 1

The applicant is fully responsible for establishing official documents to support his application. All material should be sent to the DIVISION OF TEACHER EDUCATION, STATE DEPARTMENT OF PUBLIC INSTRUCTION, RALEIGH, NORTH CAROLINA. 27602.

APPLICATION. The applicant will complete the personal information requested on the front of this form and send the form to the registrar of the institution where the Professional preparation, including student teaching, was completed. A North Carolina institution will complete Item X. An out-of-State institution will complete Item IX. The registrar of each institution attended by the applicant must file an official transcript unless the credit has been transferred and appears on some other transcript. An evaluation of the application will be made and sent to the address given on the application form.

NATIONAL TEACHER EXAMINATIONS. The National Teacher Examinations are a prerequisite to the issuance of a North Carolina Teacher's Certificate. If the applicant has taken the examination, he should have the Educational Testing Service, Box 911, Princeton, New Jersey, file an official report of scores. If the examinations have not been taken, arrangements should be made to take them as soon as possible.

TEACHING EXPERIENCE. Teaching experience which occurred outside of the public schools of North Carolina must be verified by the superintendent of the administrative unit in which the experience was obtained. Secure one Form No. 6 for each administrative unit in which experience occurred. (This form is available in the local school superintendent's office and the State office).

MILITARY SERVICE EXPERIENCE. Increment credit will be granted to a person who served one or more years of active duty after having completed a minimum of sixty semester hours of college credit. Form No. 7 may be completed by your local superintendent to establish this experience. (This form is available in the local school system or from the State office).

CERTIFICATION AREAS. The State of North Carolina issues certificates in the areas listed below. Item VIII on the front of this application form should show the Class and Area in which the applicant is seeking certification.

EMERGENCY CERTIFICATES.

Emergency Class A—This rating is granted to a person who holds a Master's Degree without having completed an appropriate Teacher Training Program.

Emergency Class B—This rating is granted to a person who has at least ninety semester hours of work or who holds the Bachelor's Degree without Teacher Training.

Emergency Class C—This rating is granted to a person who has completed a minimum of sixty semester hours.

STANDARD CERTIFICATES.

CLASS "A" LEVEL (Bachelor's Degree)

Early Childhood (K-3)
Intermediate (4-9)
(Show Subject endorsement)

Subject Areas (7-12)

Agriculture
Bible
Business Education
Distributive Education
English
French
German
Home Economics
Industrial Arts
Introduction to Vocations
Latin
Mathematics
Science
Social Studies
Spanish
Speech
Trade & Industrial Education

Special Subjects (K-12)

Art
Health Education
Library Science
Music
Physical Education and Health
Special Education

CLASS "G" LEVEL (Master's Degree): Same areas as shown for Class "A"

SPECIAL SERVICE PERSONNEL: (Master's Degree and Sixth Year)

Audiovisual Director
Counselor
Principal
Psychologist
Superintendent
Supervisor
Supervisor of Student Teachers

NOTE: College credit to be acceptable for certification in North Carolina must have been earned in an institution accredited by one of the regional accrediting associations or by the State Department of Education in the State in which the institution is located.

TEACHER MASTER FILE DATA FO

CERT. NO. 1 6 | 1ST 3 CHAR LAST NAME 8 10

1 CARD CODE 1 11 | LAST NAME 12 24 | FIRST NAME 25 34 | MIDDLE NAME 35 44 | MAIDEN 45

2 ADDRESS STREET OR BOX 1 32 | CITY 33

3 ED LEV 1 11 | INSTITUTION 12 17 | GRAD. MO 18 19 | GRAD. YR 20 21 | ED LEV 22 23 | INSTITUTION 24 28 | GRAD. MO 29 30 | GRAD. YR 31 32 | ED LEV 33 34 | INSTITUTION 35 39 | GRAD. MO 40 41 | GRAD. YR 42 43 | NC EXP 44 45 | OS EXP 46

4 INDX A 1 11 | DAYS PD. 12 14 | POSITION NO. 15 21 | UNIT 22 24 | RATING 25 29 | ALT. RATING 30 34 | SCH YR 35 36 | BUDGET CODE 37 41 | SP ED YR EXP 42 43 | CERT DA E 44 45 46

4 1 11 12 14 15 21 22 24 25 29 30 34 35 36 37 41

4 1 11 12 14 15 21 22 25 29 30 34 35 36 37 41

4 1 11 12 14 15 21 22 24 25 29 30 34 35 36 37 41

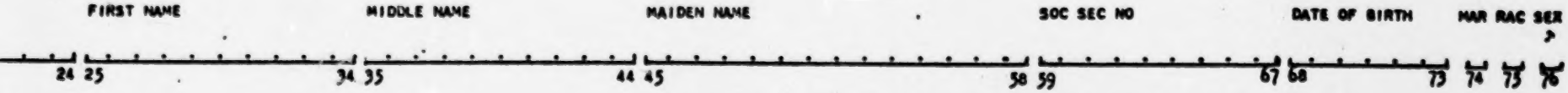
4 1 11 12 14 15 21 22 24 25 29 30 34 35 36 37 41

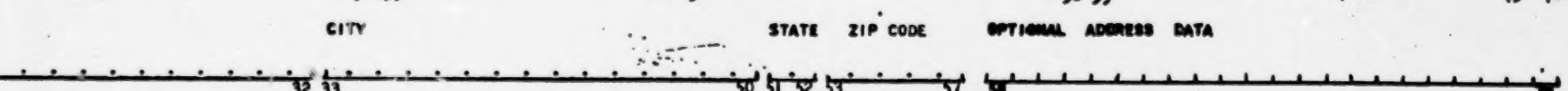
4 1

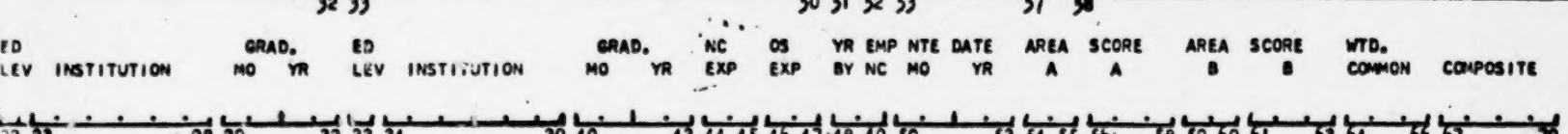
5 RETIREMENT NO. 1 11 | TERM. CODE 16 17 | TERM. DATE 18 19 | YTD GROSS 20 24 | CURR. GROSS 25 31 | SICK LV. BAL. 32 38 | SICK LV. ACCR. 39 42 | SI US 43 46 47

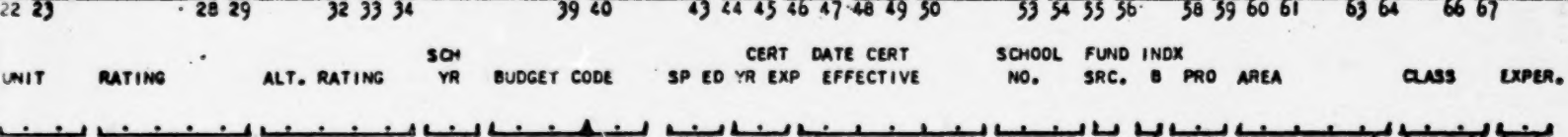
TEACHER MASTER FILE DATA FORM

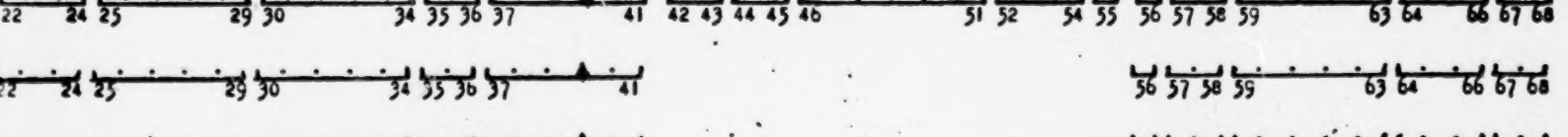
NAME

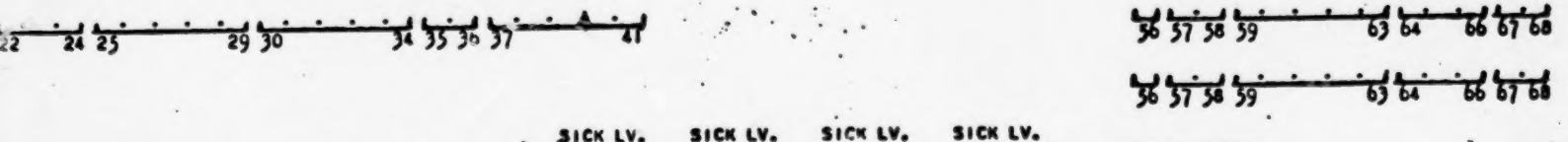


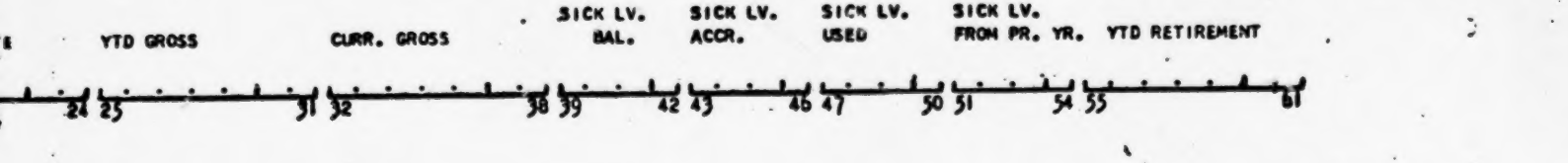












24

RALEIGH, NORTH CAROLINA JUNE 30

1 PROGRAM	2 CERTIFICATE AREA(S)	3 CLASS	4 EXPERIENCE
VOID			
COLUMNS DEFINED ON THE BACK OF THE CERTIFICATE			

ATTENTION CERTIFICATE HOLDER

This is your North Carolina certificate. The individual's copy has been issued for your records. The Superintendent's copy (original and carbon) must be presented to your Superintendent before you can be paid. (General Statutes 115-152 and 115-155) (Refer to the back of this form for additional information and instructions.)

INDIVIDUAL'S COPY

STATE OF NORTH CAROLINA

Department of Public Instruction, Raleigh, North Carolina

THE PERSON NAMED HEREON HAS COMPLETED A PROGRAM OF PREPARATION APPROVED BY THE STATE BOARD OF EDUCATION AND IS HEREBY GIVEN THIS

Certificate

TO SERVE IN THE SCHOOLS OF NORTH CAROLINA IN THE AREA(S) INDICATED:

NAME OF PERSON	CERTIFICATE NO.	DATE EXPIRES	DATE ISSUED	DATE EFFECTIVE

1 PROGRAM	2 CERTIFICATE AREA(S)	3 CLASS	4 EXPERIENCE

GIVEN UNDER OUR HANDS IN ACCORDANCE WITH THE RULES AND REGULATIONS OF THE STATE BOARD OF EDUCATION.

DIRECTOR OF DIV. OF TEACHER EDUCATION AND CERTIFICATION

STATE SUPERINTENDENT OF PUBLIC INSTRUCTION

COLUMNS DEFINED ON THE BACK OF THIS CERTIFICATE

PERSONAL RECORD OF APPROVED RENEWAL EDUCATION ACTIVITIES

This Record To Be Completed For Your Information Only.

1. DATE COMPLETED	2. APPROVED RENEWAL EDUCATION ACTIVITY	3. CREDIT	4. ADMINISTRATIVE UNIT OR COLLEGE

CODES FOR TEACHER MASTER FILE

MARITAL STATUS
S - Single
M - Married
D - Divorced
W - Widow
A - Separated

RACE
W - White
N - Negro
I - Indian
O - Oriental

SEX
M - Male
F - Female

EDUCATION LEVEL
1. Less than 60 semester hours college credit.
2. 60-89 semester hours.
3. 90 semester hours to a degree.
4. Bachelor's Degree.
5. Master's Degree.
6. Sixth year of college credit completed.
7. Doctor's Degree awarded.

MOST COMMON NORTH CAROLINA SCHOOL F.I.C.E. CODES

002906	Appalachian State University	Boone
002913	Campbell College	Buies Creek
002920	Duke University	Durham
002923	East Carolina University	Greenville
002950	North Carolina Central University	Durham
002972	North Carolina State University	Raleigh
002907	University of North Carolina	Asheville
002974	University of North Carolina	Chapel Hill
002975	University of North Carolina	Charlotte
002976	University of North Carolina	Greensboro
002984	University of North Carolina	Wilmington
002981	Western Carolina	Cullowhee

SPECIAL EDUCATION CODES
ER - Educable Mentally Retarded
SI - Speech Impaired
HI - Hearing Impaired
CR - Crippled
VI - Visually Impaired
ED - Emotionally Disturbed
LD - Learning Disabled
HB - Homebound
HP - Hospitalized
GT - Gifted and Talented
TR - Trainable and Mentally Retarded
AG - Agriculture
HE - Home Economics
TI - Trade and Industrial
DE - Distributive Education
IV - Introductions to Vocations
BE - Vocational Office Education
MG - Middle Grade
OE - Other
LD - Local Directors

SOURCE OF FUNDS
S - State
L - Local
V - Vocational
F - Federal

TERMINATION CODES
RE - Retired
DE - Deceased
PR - Personal Reasons
DH - Disability, Health Reasons
WI - Withdrawal of Benefits
DI - Disciplinary Reasons

BUDGET CODES

SUPERINTENDENT	611.1
ASSOCIATE AND ASSISTANT SUPERINTENDENT	611.2
ESEA DIRECTOR	611.3
SUPERVISORS AND ESEA COORDINATORS	625.1
UNIT-WIDE LUNCHROOM SUPERVISOR (IF CERTIFIED)	613.3
ATTENDANCE COUNSELOR (IF CERTIFIED)	617
PRINCIPALS	623.2 OR 623.1
HIGH SCHOOL TEACHERS	622
HIGH SCHOOL LIBRARIANS	622.2
HIGH SCHOOL COUNSELORS	622.3
DRIVER TRAINING AND SAFETY EDUCATION TEACHERS	671.1
VOCATIONAL TEACHERS	
AGRICULTURE	626.1
HOME ECONOMICS	626.2
TRADE AND INDUSTRIAL	626.3
DISTRIBUTIVE EDUCATION	626.4
INTRODUCTIONS TO VOCATIONS	626.5
VOCATIONAL OFFICE EDUCATION	626.6
MIDDLE GRADE	626.7
OTHER	626.8
LOCAL DIRECTORS	626.9
ELEMENTARY TEACHERS	621
ELEMENTARY LIBRARIANS	621.2
ELEMENTARY COUNSELORS	621.3
SPECIAL EDUCATION TEACHERS	621.4 OR 622.4
TRAINABLE MENTALLY RETARDED TEACHERS	670.1
KINDERGARTEN	672

TWO-LETTER STATE ABREVIATIONS

ALABAMA....AL	KENTUCKY....KY	OHIO....OH
ALASKA....AK	LOUISIANA....LA	OKLAHOMA....OK
ARIZONA....AZ	MAINE....ME	OREGON....OR
ARKANSAS....AR	MARYLAND....MD	PENNSYLVANIA....PA
CALIFORNIA....CA	MASSACHUSETTS....MA	PUERTO RICO....PR
COLORADO....CO	MICHIGAN....MI	RHODE ISLAND....RI
CONNECTICUT....CT	MINNESOTA....MN	SOUTH CAROLINA....SC
DELAWARE....DE	MISSISSIPPI....MS	SOUTH DAKOTA....SD
DISTRICT OF COLUMBIA....DC	MISSOURI....MO	TENNESSEE....TN
FLORIDA....FL	MONTANA....MT	TEXAS....TX
GEORGIA....GA	NEBRASKA....NB	UTAH....UT
GUAM....GU	NEVADA....NV	VERMONT....VT
HAWAII....HI	NEW HAMPSHIRE....NH	VIRGINIA....VA
IDAHO....ID	NEW JERSEY....NJ	VIRGIN ISLANDS....VI
ILLINOIS....IL	NEW MEXICO....NM	WASHINGTON....WA
INDIANA....IN	NEW YORK....NY	WEST VIRGINIA....WV
IOWA....IA	NORTH CAROLINA...NC	WISCONSIN....WI
KANSAS....KS	NORTH DAKOTA....ND	WYOMING....WY

PROGRAM

01 INDICATES THE SUCCESSFUL COMPLETION OF AN "APPROVED TEACHER EDUCATION PROGRAM" IN A NORTH CAROLINA INSTITUTION.

02 THIS CODE INDICATES THAT THE INDIVIDUAL HAS COMPLETED A PROGRAM FOR CERTIFICATION OTHER THAN THE "APPROVED PROGRAM" APPROACH AS INDICATED IN CODE 01.

03 SUB-STANDARD CERTIFICATE BASED ON THE EMERGENCY REGULATIONS OF THE STATE BOARD OF EDUCATION.

04 CONDITIONED CERTIFICATE VALID FOR ONE YEAR WITH TEMPORARY DEFICIENCIES WHICH MUST BE SATISFIED WITH APPROPRIATE COLLEGE CREDIT.

05 SPECIAL OCCUPATIONAL EDUCATION CERTIFICATE LIMITED TO USE IN THE AREA SHOWN.

06 RECIPROCITY CERTIFICATE BASED ON PREPARATION OUTISDE OF NORTH CAROLINA.

Column 2 AREA

Special Service Personnel

001	Superintendent
010	Principal (K-12)
010-022	High School Principal*
010-032	Elementary School Principal*
007	Supervisor
021	Assistant Director
025	Counselor
027	Supervisor of Student Teachers
015	School Psychologist Level I
025	School Psychologist Level II
035	School Psychologist Level III

Elementary

020	Elementary (Graduate)*
021	Primary*
022	Grammar*
023	Early Childhood Education
22-000	Intermediate (Last three digits show subject endorsement(s) i.e. 22-163 Intermediate - Language Arts)

Special Subject Areas (Grades 1-12)

007	School Librarian
009	Teacher Librarian
010	Unlimited
011	Mentally Retarded
012	Speech and Hearing
013	Visually Handicapped
014	Crippled
015	Emotionally Disturbed
090	Physical Education
097	Health Education
100	Language Arts
150	Reading
200	Music
203	Instrumental Music
210	Art

Subject Areas

100	English
102	Speech
200	Mathematics
300	Science
307	General Science
312	Earth Science
313	Physical Science
310	Biology
320	Physics
325	Chemistry
400	Social Studies
401	Civics and Citizenship
402	Government
405	Political Science
410	Geography
420	History
421	Economics
422	Sociology
423	Anthropology
500	French
501	Spanish
502	German
503	Russian
550	Latin
600	Business Education
601	Basic Business
610	Typewriting
620	Stenography
622	Bookkeeping, Accounting
630	Industrial Arts
905	Bible

Occupational Education

700	Agriculture
701	Agriculture Technician
710	Home Economics
720	Distributive Education
740	Trade and Industrial
799	Introduction to Vocational

Emergency Ratin

031	Emergency

* No New Certificates Issued in these areas

Column 3 - Class refers to level of preparation.

A, VA, PVA, H2P, ELP	Bachelor's degree
C, SC, VC, P, S, CC, AVC	Master's degree
AP, ASC, AS, AC	Sixth Year (advanced)
DAP, DS, DAA, DVC, DTC	Doctor's degree
PV, V	Vocational Trades

THE "ALPHA-INDEX CARDS"

The following pages describe the information contained in a "alpha-index card". In order to conserve space, the cards will not have labels explaining the nature of the data nor the codes used to represent certain conditions. The user must learn, through familiarity, that certain data will appear in certain positions.

The explanation of codes for these cards appears in another part of this booklet.

LAST	FIRST	MIDDLE	MAIDEN	*	11*		104000
999-99-9999	1/29/37	432111	2/14/71		7 4	76*	7/01/71*
SEPARATED	ORIENTAL	FEMALE*	ER 123		S*		2/14/71

DELETED FROM MASTER

5 003123	464*	01	002	P-07*	162	312.02A	920	P-07	G-11	70	623.1 *
4 006789	659	01	100	G-11*	160	160.	920	P-06	G-10	69	623.1 *
				*	163	154	920	P-05	G-09	68	623.1 *
				*	174	150	920	P-04	G-08	67	623.1 *
				*		MIL		P-03	G-07	66-	*
				*							

03/71 08 623 11 671 646 1170*

STREET

OPTIONAL ADDRESS DATA

CITY NC 27604

TC XX/XX/XX*

The following pages describe the data fields on this card and the boxes which are drawn around logical units.

It is important to point out here those fields which are not enclosed in a box.

In the upper right corner of the card is a person's certificate number. This is a six digit numeric item.

In the center of the card under maiden name is a date which is the date the card was last changed.

The three lines next to the bottom line are address lines and include street address, city, state, and zip code.

```
LAST          FIRST     MIDDLE     MAIDEN          *  11*          104000
999-99-9999    1/29/37   432111      2/14/71           7  4 76* 7/01/71*
SEPARATED     ORIENTAL  FEMALE*    ER    123         S*          2/14/71
**************************DELETED FROM MASTER
5 003123  464*01   002   P-07*162  312.02A 920   P-07   G-11 70  623.1 *
4 006789  659 01   100   G-11*160  160.    920   P-06   G-10 69  623.1 *
                          *163  154     920   P-05   G-09 68  623.1 *
                          *174  150     920   P-04   G-08 67  623.1 *
                          *        MIL        P-03   G-07 66-       *
                          *

03/71 08 623 11 671 646 1170*
STREET
OPTIONAL ADDRESS DATA
CITY                NC 27604

TC XX/XX/XX*
```

The data in the box above is a logical unit. The asterisk is a flag that will be printed only when some of the data in the box has changed from the previous card.

The last name will appear first with up to 14 characters.

The first name will appear following the last name and may have up to 10 characters.

The middle name will be next with up to 10 characters,

The maiden name will be the last data item carried in this group and can be up to 14 characters.

```
LAST              FIRST      MIDDLE     MAIDEN          * 11*          104000
999-99-9999       1/29/37    432111       2/14/71          7  4 76* 7/01/71*
SEPARATED         ORIENTAL   FEMALE*    ER    123          S*          2/14/71
**************************DELETED FROM MASTER
5 003123  464*01    002    P-07*162  312.02A 920   P-07   G-11 70  623.1 *
4 006789  659 01    100    G-11*160  160.    920   P-06   G-10 69  623.1 *
                            *163    154     920   P-05   G-09 68  623.1 *
                            *174    150     920   P-04   G-08 67  623.1 *
                            *         MIL         P-03   G-07 66-       *
                            *

03/71 08 623 11 671 646 1170*
STREET
OPTIONAL ADDRESS DATA
CITY                NC 27604

TC XX/XX/XX*
```

In the upper left of the above group will appear an individual's social security number. This is a 9 digit number edited with two dashes between groups of 3, 2, and 4 digits.

In the center of the top line is the person's date of birth. It will be in the order of month/day/year.

In the upper right corner of the above box is the retirement number. This is a 6 digit numeric field.

In the lower left corner of the above box is a word describing the person's marital status.

In the center of the lower line of the box is a word describing a person's race.

In the lower right corner of the above box is printed a word—either MALE or FEMALE to denote the certificate holder's sex.

```
LAST            FIRST     MIDDLE     MAIDEN          * 11*          104000
999-99-9999     1/29/37   432111       2/14/71         7  4 76* 7/01/71*
SEPARATED       ORIENTAL  FEMALE*   [ER  123          S*]          2/14/71
**************************DELETED FROM MASTER
5 003123  464*01   002   P-07*162  312.02A 920   P-07   G-11 70  623.1 *
4 006789  659 01   100   G-11*160  160.    920   P-06   G-10 69  623.1 *
                          *163  154     920   P-05   G-09 68  623.1 *
                          *174  150     920   P-04   G-08 67  623.1 *
                          *       MIL           P-03   G-07 66-      *
                          *

03/71 08 623 11 671 646 1170*
STREET
OPTIONAL ADDRESS DATA
CITY                NC 27604

TC XX/XX/XX*
```

The above box encloses data about a person's employment status. The asterisk in the box will be printed any time data in this box changes from the previous card.

The rightmost field in this box is a single letter designating the source of funds for this employee's position. It will be an S for state, L for local, V for vocational or F for federal.

The center field in the above box is the school number which can be coupled with the unit number below it to give a unique number for the identification of a particular school. The field is three numeric digits.

In the left hand side of this box will appear two letters designating a special education teacher's area of specialty. For non-special education teachers this area will remain blank.

```
LAST            FIRST    MIDDLE     MAIDEN          *II*          104000
999-99-9999      1/29/37  432111      2/14/71         7  4 76* 7/01/71*
SEPARATED       ORIENTAL  FEMALE*     ER   123          S*        2/14/71
**************************DELETED FROM MASTER
5 003123  464*01   002   P-07*162  312.02A 920  P-07  G-11 70  623.1 *
4 006789  659 01   100   G-11*160  160.    920  P-06  G-10 69  623.1 *
                          *163  154     920  P-05  G-09 68  623.1 *
                          *174  150     920  P-04  G-08 67  623.1 *
                          *       MIL        P-03  G-07 66-       *
                          *

03/71 08 623 11 671 646 1170*
STREET
OPTIONAL ADDRESS DATA
CITY                NC 27604

TC XX/XX/XX*
```

The data in the box above is a logical unit. The asterisk is a flag that will be printed only when some of the data in the box has changed from the previous card.

The field to the left in the top line is the year first employed in North Carolina.It is a two digit numeric number with the asterisk flag for this group to its right.

Directly underneath the years of teaching experience is the number of years taught in North Carolina. It also is a 2 digit numeric number.

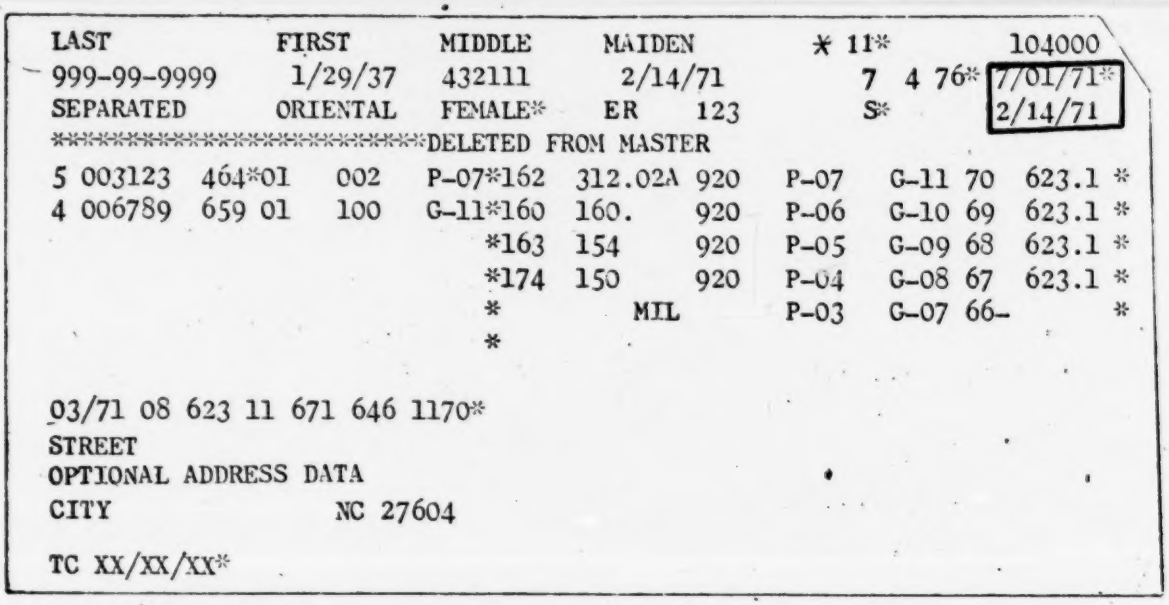
To the right on the second line of this box is the number of years of teaching experience out of the state of North Carolina. It also is a 2 digit numeric field.

```
LAST            FIRST     MIDDLE     MAIDEN          * 11*          104000
999-99-9999      1/29/37   432111       2/14/71         7  4 [76*] 7/01/71*
SEPARATED        ORIENTAL  FEMALE*    ER     123        S*          2/14/71
**************************DELETED FROM MASTER
5 003123  464*01   002    P-07*162  312.02A 920   P-07   G-11 70  623.1 *
4 006789  659 01   100    G-11*160  160.    920   P-06   G-10 69  623.1 *
                           *163  154     920   P-05   G-09 68  623.1 *
                           *174  150     920   P-04   G-08 67  623.1 *
                           *        MIL          P-03   G-07 66-       *
                           *

03/71 08 623 11 671 646 1170*
STREET
OPTIONAL ADDRESS DATA
CITY                NC 27604

TC XX/XX/XX*
```

The box above encloses the date a certificate expires. The asterisk on the right will be printed any time a new date is put in the system or the certificate is reprinted.

It is implied that the certificate expires on June 30 of the year printed on the card.

5.26



```
LAST            FIRST     MIDDLE     MAIDEN          * 11*          104000
999-99-9999      1/29/37   432111      2/14/71          7  4 76*  7/01/71*
SEPARATED       ORIENTAL   FEMALE*     ER    123        S*        2/14/71
**************************DELETED FROM MASTER
5 003123  464*01   002   P-07*162  312.02A 920   P-07   G-11 70  623.1 *
4 006789  659 01   100   G-11*160  160.    920   P-06   G-10 69  623.1 *
                          *163  154     920   P-05   G-09 68  623.1 *
                          *174  150     920   P-04   G-08 67  623.1 *
                          *       MIL         P-03   G-07 66-       *
                          *

03/71 08 623 11 671 646 1170*
STREET
OPTIONAL ADDRESS DATA
CITY                NC 27604

TC XX/XX/XX*
```

The box above is a logical unit of information about certificate dates. The asterisk in the upper right corner of the box is a flag which will only be printed when some data within the box changes from a previous printing of the card.

The six position date (Month/Day/Year) which is edited with slashes in the upper part of the box is the date which the certificate is effective. In most cases, this will be a July first date but there may be exceptions.

The six position date (Month/Day/Year) which appears on the bottom line of this box is the date of issue of the certificate.

```
LAST            FIRST    MIDDLE     MAIDEN          * 11*          104000
999-99-9999      1/29/37  432111      2/14/71          7  4 76* 7/01/71*
SEPARATED       ORIENTAL  FEMALE*     ER   123          S*        2/14/71
**********************DELETED FROM MASTER
5 003123  464*01   002   P-07*162  312.02A 920   P-07   G-11 70  623.1 *
4 006789  659 01   100   G-11*160  160.    920   P-06   G-10 69  623.1 *
                         *163  154     920   P-05   G-09 68  623.1 *
                         *174  150     920   P-04   G-08 67  623.1 *
                         *        MIL          P-03   G-07 66-       *
                         *

03/71 08 623 11 671 646 1170*
STREET
OPTIONAL ADDRESS DATA
CITY                NC 27604

TC XX/XX/XX*
```

The box above encloses a row of asterisks and the message that tells that a record has been deleted from the Active Master File. The data in the record will go to a tape file of deleted records.

This message will only be printed for records which are deleted from the Active Master File.

5.1.7

28

```
LAST            FIRST     MIDDLE     MAIDEN          * 11*          104000
999-99-9999      1/29/37   432111      2/14/71          7  4 76* 7/01/71*
SEPARATED       ORIENTAL   FEMALE*    ER   123          S*         2/14/71
**********************DELETED FROM MASTER
5 003123  464*01   002   P-07*162  312.02A 920   P-07   G-11 70  623.1 *
4 006789  659 01   100   G-11*160  160.    920   P-06   G-10 69  623.1 *
                          *163  154.    920   P-05   G-09 68  623.1 *
                          *174  150.    920   P-04   G-08 67  623.1 *
                          *          MIL         P-03   G-07 66-      *
                          *

03/71 08 623 11 671 646 1170*
STREET
OPTIONAL ADDRESS DATA
CITY                NC 27604

TC XX/XX/XX*
```

The boxes above are the data which tells of a person's experience history. There are seven columns of data in each line. Each line stands for one scholastic year of experience. The asterisk to the right of each years entry will be printed as a flag only if some of the data for that year has changed from the previous card.

Starting from the left:

The first column consists of a three digit number telling the number of days taught for that scholastic year.

The second column consists of seven alphanumeric characters which identify a teacher's position number.

The third column is a three digit numeric field which reports the unit number code.

The fourth field is a person's rating which consists of a class of up to three alphabetic characters and experience of two numeric digits. The class and experience are separated by a hyphen.

The fifth field is for alternate rating, and has the same format as the rating.

The sixth field is a two digit number telling the school year to which the experience history applies. This will be the calendar year in which the school year ends.

The seventh and right hand field in the box consists of the budget code which is a five digit numeric field with a decimal understood to fall between digits 3 and 4.

```
LAST            FIRST     MIDDLE     MAIDEN        * 11*          104000
999-99-9999      1/29/37   432111      2/14/71          7  4 76* 7/01/71*
SEPARATED       ORIENTAL   FEMALE*     ER   123          S*       2/14/71
**************************DELETED FROM MASTER
5 003123  464*01   002   P-07*162  312.02A 920   P-07   G-11 70  623.1 *
4 006789  659 01   100   G-11*160  160.    920   P-06   G-10 69  623.1 *
                          *163  154     920   P-05   G-09 68  623.1 *
                          *174  150     920   P-04   G-08 67  623.1 *
                          *        MIL          P-03   G-07 66-       *
                          *
```

```
03/71 08 623 11 671 646 1170*
STREET
OPTIONAL ADDRESS DATA
CITY                NC 27604

TC XX/XX/XX*
```

The box above encloses data about the National Teacher Examination (NTE) scores. All data recorded in these seven fields must be numeric. The asterisk at the right will print if any data in the box has changed.

The first field on the left shows the DATE on which the exam was taken. Only the month and year are recorded.

The second field from the left is the CODE for the Teaching Area A Exam. This is a two position field.

The third field from the left is the SCORE for the Teaching Area A Exam. This is a three position field.

The fourth field from the left is the CODE for the Teaching Area B Exam. This is a two position field.

The fifth field from the left is the SCORE for the Teaching Area B Exam. This is a three position field.

The sixth field from the left is the WEIGHTED COMMON SCORE. It is a three position field.

The seventh and last field is a COMPOSITE SCORE and consists of up to four digits.

```
LAST            FIRST     MIDDLE     MAIDEN          * 11*          104000
999-99-9999      1/29/37   432111      2/14/71          7  4 76* 7/01/71*
SEPARATED       ORIENTAL   FEMALE*     ER   123         S*         2/14/71
**************************DELETED FROM MASTER
5 003123  464*01   002   P-07*162  312.02A 920   P-07   G-11 70  623.1 *
4 006789  659 01   100   G-11*160  160.    920   P-06   G-10 69  623.1 *
                          *163  154     920   P-05   G-09 68  623.1 *
                          *174  150     920   P-04   G-08 67  623.1 *
                          *       MIL     P-03   G-07 66-       *
                          *

03/71 08 623 11 671 646 1170*
STREET
OPTIONAL ADDRESS DATA
CITY                NC 27604

TC XX/XX/XX*
```

The box above encloses two fields. The asterisk on the right will only be printed if the data in this group changes from the previous card.

The first field is a two character alphabetic termination code.

The second field is a termination date in the form of month, day and year.

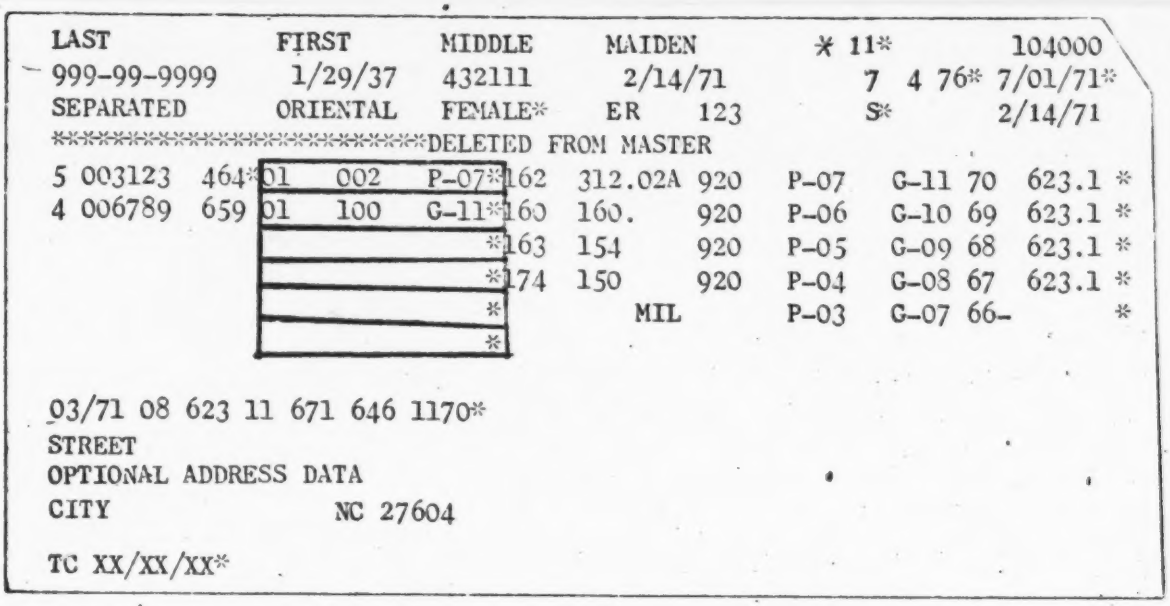
```
LAST            FIRST     MIDDLE     MAIDEN          * 11*          104000
999-99-9999     1/29/37   432111      2/14/71          7  4 76* 7/01/71*
SEPARATED       ORIENTAL  FEMALE*     ER    123        S*         2/14/71
**************************DELETED FROM MASTER
5 003123  464*01   002   P-07*162  312.02A 920   P-07   G-11 70  623.1 *
4 006789  659 01   100   G-11*160  160.    920   P-06   G-10 69  623.1 *
                          *163  154       920   P-05   G-09 68  623.1 *
                          *174  150       920   P-04   G-08 67  623.1 *
                          *         MIL     P-03   G-07 66-        *
                          *

03/71 08 623 11 671 646 1170*
STREET
OPTIONAL ADDRESS DATA
CITY                NC 27604

TC XX/XX/XX*
```

The box above is a logical unit. The asterisk in the upper right corner of the box is a flag which will only be printed when some of the data in the box changes from the previous updating of the card.

This box consists of three columns of up to three rows each. The first column on the left is a one digit number for education level.

The center column in the box above is a six digit numeric code which uniquely identifies the schools attended by the certificate holder.

The right hand column in the above box is the date of graduation of the certificate holder and consists of four digits. The first two specify the month and the last two record the year of graduation.



The boxes above are a series of up to six lines, each line describing an area of certification. To the right of each line is an asterisk which will be printed only if data on that line has changed from a previous (updating) printing of the card.

The column on the left side of the boxes above describes the program. This is a two digit number.

The center column tells the certificate area. It is up to five numeric digits long, although in most cases it will only be three digits.

The class and experience column will be printed on the right of this box, separated by a hyphen. The class consists of up to three alphabetic characters. These are to the left of the hyphen. On the right side of the hyphen is a two digit number telling the number of years of experience in this certificate area.

The above codes are explained on the back of a certificate.

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